IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A direct current motor, comprising:

a rotor including a rotation shaft and rotor coils;

a stator configured to apply a magnetic field to the rotor via magnetic poles of the stator opposing magnetic poles of the rotor;

a flat disc-shaped electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects the electrical parts mounting base board and such that a first flat surface of the electrical parts mounting base board faces the rotor;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern being directly formed on a second flat surface of the electrical parts mounting base board; and

a pair of electrode brushes in sliding contact with the contact electrode part of the commutator and configured to supply electric power to the rotor coils through the commutator.

Claim 2 (Original): The direct current motor according to claim 1, further comprising:

a noise suppressing element provided on the electrical parts mounting base board and configured to suppress noise produced in the direct current motor.

Claim 3 (Original): The direct current motor according to claim 1, wherein respective electrode brushes are split into plural separate portions, and wherein sliding contacts of the separate portions with the contact electrode part of the commutator cause a phase difference

due to a shift of rotation angle positions of the sliding contacts of the separate portions relative to the contact electrode part.

Claim 4 (Original): The direct current motor according to claim 1, further comprising:

a support base configured to support the rotation shaft of the rotor,

wherein the electrode brushes include respective external terminals configured to provide an external connection to the direct current motor, and

wherein the electrode brushes and the external terminals of the electrode brushes are fixed on the support base.

Claim 5 (Original): The direct current motor according to claim 1, further comprising:

at least one rotation detecting brush in sliding contact with the contact electrode part of the commutator and configured to detect a signal on the commutator indicative of an operation of the direct current motor.

Claim 6 (Original): The direct current motor according to claim 5, further comprising:

a support base configured to support the rotation shaft of the rotor,

wherein the electrode brushes include respective external terminals configured to provide an external connection to the direct current motor,

wherein the at least one rotation detecting brush includes a respective external terminal configured to provide an external connection to the direct current motor, and

wherein the electrode brushes, the at least one rotation detecting brush, the external terminals of the electrode brushes, and the respective external terminal of the at least one rotation detecting brush are fixed on the support base.

Claim 7 (Original): The direct current motor according to claim 5, wherein the electrode brushes are configured to contact the commutator at representative first and second rotation angle positions 180° apart on the commutator, and wherein the at least one rotation detecting brush is configured to contact the commutator at a third rotation angle position such that an angle formed between the at least one rotation detecting brush and one of the electrode brushes is less than 180°/n, where n is the number of rotor magnetic poles and n is a natural number of 3 or greater.

Claim 8 (Original): The direct current motor according to claim 5, further comprising:

a noise suppressing element provided on the electrical parts mounting base board and configured to suppress noise produced in the direct current motor.

Claim 9 (Original): The direct current motor according to claim 5, wherein respective electrode brushes are split into plural separate portions, and wherein sliding contacts of the separate portions with the contact electrode part of the commutator cause a phase difference due to a shift of rotation angle positions of the sliding contacts of the separate portions relative to the contact electrode part.

Claim 10 (Currently Amended): A direct current motor, comprising:

a rotor including a rotation shaft and rotor coils;

a stator configured to apply a magnetic field to the rotor via magnetic poles of the stator opposing magnetic poles of the rotor;

an electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects the electrical parts mounting base board;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern being directly formed on one surface of the electrical parts mounting base board; and

a pair of electrode brushes, each pair of electrode brushes including first and second separate portions that are in sliding contact with the contact electrode part of the commutator at respective sliding contact positions of a different distance from an axis of the rotation shaft, and configured to supply electric power to the rotor coils through the commutator,

wherein the respective sliding contact positions of the electrode brushes with the contact electrode part are shifted in the radial direction.

Claim 11 (Original): The direct current motor according to Claim 10, further comprising:

at least one rotation detecting brush in sliding contact with the contact electrode part of the commutator at at least one sliding contact position and configured to detect a signal on the commutator indicative of an operation of the direct current motor,

wherein the respective sliding contact positions of the electrode brushes and the at least one sliding contact position of the at least one rotation detecting brush are arranged at a different distance from the axis of the rotation shaft, and are shifted from each other in the radial direction.

Claim 12 (Previously Presented): A direct current motor, comprising:

a rotor including a rotation shaft and rotor coils;

means for applying a magnetic field to the rotor;

a flat disc-shaped electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects to the electrical parts mounting base board and such that a first flat surface of the electrical parts mounting base board faces the rotor;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern being directly formed on a second flat surface of the electrical parts mounting base board; and

means for supplying electric power to the rotor coils through the commutator, the supplying means being in sliding contact with the contact electrode part of the commutator.

Claim 13 (Original): The direct current motor according to claim 12, further comprising:

means for suppressing noise produced in the direct current motor,

wherein the suppressing means is provided on the electrical parts mounting base board.

Claim 14 (Original): The direct current motor according to claim 12, further comprising:

means for supporting the rotation shaft of the rotor; and

means for connecting externally to the supplying means,

wherein the supplying means and the connecting means are fixed on the supporting means.

Claim 15 (Original): The direct current motor according to claim 12, further comprising:

means for detecting a signal on the commutator indicative of an operation of the direct current motor, the detecting means being in sliding contact with the contact electrode part of the commutator.

Claim 16 (Original): The direct current motor according to claim 15, further comprising:

means for supporting the rotation shaft of the rotor;

a first means for connecting externally to the supplying means; and

a second means for connecting externally to the detecting means,

wherein the supplying means, the detecting means, and the first and second connecting means are fixed on the supporting means.

Claim 17 (Original): The direct current motor according to claim 15, further comprising:

means for suppressing noise produced in the direct current motor,

wherein the suppressing means is provided on the electrical parts mounting base board.

Claim 18 (Currently Amended): A direct current motor comprising:

a rotor including a rotation shaft and rotor coils;

means for applying a magnetic field to the rotor;

an electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects to the electrical parts mounting base board;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern being directly formed on one surface of the electrical parts mounting base board; and

means for supplying electric power to the rotor coils through the commutator, the supplying means including first and second separate portions that are ~~being~~ in sliding contact with the contact electrode part of the commutator at respective sliding contact positions of a different distance from an axis of the rotation shaft,

wherein the respective sliding contact positions of the supplying means with the contact electrode part are shifted in the radial direction.

Claim 19 (Original): The direct current motor according to claim 18, further comprising:

means for detecting a signal on the commutator indicative of an operation of the direct current motor, the detecting means being in sliding contact with the contact electrode part of the commutator at at least one sliding contact position,

wherein the respective sliding contact positions of the supplying means and the at least one sliding contact position of the detecting means are arranged at a different distance from the axis of the rotation shaft, and are shifted from each other in the radial direction.

Claim 20 (Previously Presented): A method of making a direct current motor with a rotor including a rotation shaft and rotor coils, a stator, a flat disc-shaped electrical parts mounting base board positioned such that a first flat surface of the electrical parts mounting

base board faces the rotor, a commutator including a contact electrode part formed with a plane conductive layer pattern, and a pair of electrode brushes, said method comprising the steps of:

forming the contact electrode part of the commutator and the plane conductive layer pattern directly on a second flat surface of the electrical parts mounting base board;

fixing the electrical parts mounting base board on the rotation shaft such that the rotation shaft perpendicularly intersects the electrical parts mounting base board;

providing the pair of electrode brushes on a support base; and

assembling the support base onto the electrical parts mounting base board and the rotation shaft such that the electrode brushes are in sliding contact with the contact electrode part of the commutator in the same plane.

Claim 21 (Original): The method of claim 20, further comprising the step of:

providing a noise suppressing element on the electrical parts mounting base board.

Claim 22 (Original): The method of claim 20, wherein the providing step includes:

arranging the pair of electrode brushes such that the electrode brushes are in sliding contact with the contact electrode part of the commutator at respective sliding contact positions of a different distance from an axis of the rotation shaft, and the respective sliding contact positions of the electrode brushes are shifted in the radial direction.

Claim 23 (Original): The method of claim 20, wherein the direct current motor further includes at least one rotation detecting brush,

wherein the providing step provides the pair of electrode brushes and the at least one rotation detecting brush on a support base, and

wherein the assembling step assembles the support base onto the electrical parts mounting base board and the rotation shaft such that the electrode brushes and the at least one rotation detecting brush are in sliding contact with the contact electrode part of the commutator in the same plane.

Claim 24 (Original): The method of claim 23, further comprising the step of:

providing a noise suppressing element on the electrical parts mounting base board.

Claim 25 (Original): The method of claim 23, wherein the providing step includes:

arranging the pair of electrode brushes and the at least one rotation detecting brush such that respective sliding contact positions of the electrode brushes and at least one sliding contact position of the at least one rotation detecting brush with the contact electrode part of the commutator are at a different distance from an axis of the rotation shaft, and are shifted from each other in the radial direction.

Claim 26 (Previously Presented): An apparatus having a direct current motor, comprising:

a rotor including a rotation shaft and rotor coils;

a stator configured to apply a magnetic field to the rotor via magnetic poles of the stator opposing magnetic poles of the rotor;

a flat-disc-shaped electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects the electrical parts mounting base board and such that a first flat surface of the electrical parts mounting base board faces the rotor;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive

layer pattern being directly formed on a second flat surface of the electrical parts mounting base board; and

a pair of electrode brushes in sliding contact with the contact electrode part of the commutator and configured to supply electric power to the rotor coils through the commutator.

Claim 27 (Original): The apparatus according to claim 26, further comprising:

at least one rotation detecting brush in sliding contact with the contact electrode part of the commutator and configured to detect a signal on the commutator indicative of an operation of the direct current motor.

Claim 28 (Currently Amended): An apparatus having a direct current motor comprising:

a rotor including a rotation shaft and rotor coils;

a stator configured to apply a magnetic field to the rotor via magnetic poles of the stator opposing magnetic poles of the rotor;

an electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersects the electrical parts mounting base board;

a commutator including a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern being directly formed on the electrical parts mounting base board; and

a pair of electrode brushes, each pair of electrode brushes including first and second separate portions that are in sliding contact with the contact electrode part of the commutator at respective sliding contact positions of a different distance from an axis of the rotation shaft, and configured to supply electric power to the rotor coils through the commutator,

wherein the respective sliding contact positions of the electrode brushes with the contact electrode part are shifted in the radial direction.

Claim 29 (Original): The apparatus according to claim 28, further comprising:

at least one rotation detecting brush in sliding contact with the contact electrode part of the commutator at at least one sliding contact position and configured to detect a signal on the commutator indicative of an operation of the direct current motor,

wherein the respective sliding contact positions of the electrode brushes and the at least one sliding contact position of the at least one rotation detecting brush are arranged at a different distance from the axis of the rotation shaft, and are shifted from each other in the radial direction.